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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/754,169	01/03/2001	Koichi Tanaka	16869P-019200US	2772

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EXAMINER

MANOSKEY, JOSEPH D

ART UNIT	PAPER NUMBER
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2113

DATE MAILED: 02/13/2004

8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/754,169

Applicant(s)

TANAKA ET AL.

Examiner

Joseph Manoskey

Art Unit

2113

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 05 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chong, Jr., U.S. Patent 5,896,492, hereinafter referred to as "Chong", in view of Lubbers et al., U.S. Patent 5,774,643, hereinafter referred to as "Lubbers".

1. Referring to claim 1, Chong teaches a storage system with redundant components (See Fig. 5A) comprising a plurality of disk devices (See Fig. 5A and Col. 4, lines 41-42). The system is also comprised of a first controller with the first controller connected to a first host and a second host, also a second controller with the second controller connected to the second host and the first host. The two controllers act as backup controllers or stand-by controllers for each other (See Chong, Fig. 5A and Col. 4, lines 48-57). Chong also discloses a data link between two controllers (See Fig. 1B and Col. 1, lines 45-47) for communications between the two controllers. Chong does not teach the second controller obtaining information from the first controller to respond to requests for the first controller by the communication lines, however Chong does teach the second controller performing the data transferring for the first controller when the first controller is not functional and the first controller doing the same for the second controller when the second controller is not functional (See Col. 5, lines 21-42).

Lubbers teaches a pair of redundant components for accessing an array of disks (See Fig. 3). Lubbers discloses the first and second controller having a plurality of communication lines between the two (See Fig. 3). Lubbers also teaches of the process of failover that allows the second controller to process the requests to the first controller (See Col. 8, lines 12-16). The controllers use the communication link to send information about the process (See Col. 8, lines 7-9). It would be obvious to one of ordinary skill in the art at the time of the invention to combine the redundant controllers of Chong with the failover using the communication link of Lubbers. This would have been obvious to one of ordinary skill in the art at the time of the invention to do because if one controller fails it allows for all the storage devices to continue being served (See Lubbers, Col. 8, lines 14-16).

2. Referring to Claim 3, Chong and Lubbers disclose all the limitations (See rejection of claim 1) including the transferring of data from the first controller to the second controller so that in the event that the first controller fails the second controller can continue with the operation (See Chong, Col. 3, lines 41-59).

3. Referring to Claim 4, Chong and Lubbers teach all the limitations (See rejection of claim 3) including that the backup controller takes control of the data transfer until the primary memory controller is replaced (See Chong, Col. 1, lines 27-35). After the replacement, control would return to the primary memory controller.

4. Referring to Claim 6, Chong and Lubbers disclose all the limitations (See rejection of claim 1) including the use of a fibre channel for connecting the first and

second controller to the first and second host (See Chong, Fig. 5B and Col. 3, lines 6-8).

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chong and Lubbers in view of Uchiyama et al., U.S. Patent 6,408,358, hereinafter will be referred to as "Uchiyama".

6. Referring to claim 2, Chong and Lubbers disclose all the limitations (See rejection of claim 1) except for the controllers having a plurality of ports for connection to a plurality of hosts. Uchiyama teaches a storage system that has a plurality of ports to connect to a plurality of hosts (See Fig. 1 and Col. 1, lines 16-27). It would be obvious to one of ordinary skill in the art at the time of the invention to use the plurality of ports of Uchiyama et al. for the current and stand-by ports of Chong. This would be obvious to one of ordinary skill in the art during the time of the invention to do this to improve reliability and availability by using the redundant components (See Uchiyama, Col. 1, lines 21-27) to allow more than the two hosts of Chong to be connected to the memory control system.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chong and Lubbers in view of Idleman et al., U.S. Patent 5,274,645, hereinafter referred to as "Idleman".

8. Referring to claim 5, Chong and Lubbers teach all the limitations (See rejection of claim 4) except for the system further comprising an input device switch. Idleman discloses a storage system with a switch (See Fig. 3). It would be obvious to one of ordinary skill in the art at the time the invention was made to combine switch of Idleman

et al. with the storage system of Chong for connecting the hosts to the controllers. This would have been obvious to one of ordinary skill in the art at the time of the invention to be lead to do this since it increases the reliability of the system by allowing a computer to access the disk drives through more than one path in the event that a component fails (See Idleman et al., Col. 8, lines 15-20). This would allow each of the controllers in Chong access to all the disk drives on their primary paths and also on their backup paths, which would increase the overall goal of reliability of the system.

Response to Arguments

9. Applicant's arguments, see pages 5 and 6, filed 29 December 2003, with respect to the rejection(s) of claim(s) 1 under 35 U.S.C. 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Lubbers (See above rejections).

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the


shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

1Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Manoskey whose telephone number is (703) 308-5466. The examiner can normally be reached on Mon.-Fri. (8am to 4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (703) 305-9713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JDM
February 10, 2004


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